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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/718,047	11/20/2003	Jing Li	P25,711-A USA	1275
23307	7590	12/11/2006	EXAMINER	
SYNNESTVEDT & LECHNER, LLP 2600 ARAMARK TOWER 1101 MARKET STREET PHILADELPHIA, PA 191072950			ZIMMER, MARC S	
			ART UNIT	PAPER NUMBER
			1712	

DATE MAILED: 12/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/718,047

Applicant(s)

LI ET AL.

Examiner

Marc S. Zimmer

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 November 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3, 12 and 13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 2 and 12 is/are rejected.
- 7) ☒ Claim(s) 3 and 13 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

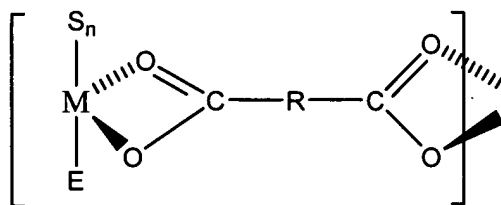
Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application
- ☐ Other: _____.

Claim Analysis

In the final rejection, the Examiner maintained the rejection over the article authored by Tao et al. reasoning that the structural description was not as limiting as Applicant believed in view of their utilization of the transition phrase “comprising” when describing the makeup of the repeat unit. (In retrospect, claim 1 as it was phrased as of Applicant’s March 2006 response should probably have been rejected under 35 U.S.C. 112, second paragraph because of the apparent conflict in the phrase “unit *comprising* a transition metal center *consisting of* one or more transition metal atoms.” This matter is now moot because the offending language has been removed with the latest response.)

Applicant is advised that, for the purpose of evaluating the present claims against the prior art, it is being assumed that a repeat as it is presently defined is aptly described by the following (a polycarboxyate is portrayed here as the polyfunctional ligand but it is understood that the claims do not limit the compounds to those derived from a polycarboxylic acid):



E = exodentate ligand
S = solvent
n = integer
R = divalent organic residue

Inasmuch as the claims indicate that 2-dimensional sheets are formed from the polyfunctional ligand and the metal centers, the skilled artisan will appreciate that the heteroatoms of the bidentate sites form not only at least a dative bond to the metal atoms within the same chain, but also bonds to metal atoms in adjacent chains thereby forming the sheet. Of course, the 3-dimensional structure is realized by forming bridges between sheets using the exodentate ligands.

It should be noted that Applicant has also amended claim 2 so as to make it independent. In doing so, they have removed the requirement that the exodentate ligand be aromatic and, hence, the article entitled "Synthesis and Characterization of Microporous Coordination Polymers with Open Frameworks authored by Seki et al., and published in the Journal of Physical Chemistry, Part B (2002), 106, 1380-85, which had been overcome previously, is now considered a reference against at least claim 2 again.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 2 is rejected under 35 U.S.C. 102(a) as being anticipated by
the article entitled "Synthesis and Characterization of Microporous Coordination

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Polymers with Open Frameworks authored by Seki et al., and published in the *Journal of Physical Chemistry, Part B* (2002), 106, 1380-85. Seki discloses the preparation of several 3-dimensional coordination polymers derived from copper complexes, one of several dicarboxylic acids, and triethylenediamine where the latter is a pillar ligand joining sheets formed by the metal complex and the dicarboxylic acids.

Claims 1, 2, and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by the article entitled "Hydrothermal Synthesis and Crystal Structures of Three-Dimensional Coordination Frameworks Constructed with Mixed Terephthalate (tp) and 4,4'-bipyridine (4,4'-bipy) Ligands: $[M(tp)(4,4'-bipy)]$ ($M = Co^{II}$, Cd^{II} , or Zn^{II})" authored by Tao et al. and published in *J. Chem Soc. Dalton Trans.* (200), 3669-3674. See the abstract and figures.

Claims 1, 2, and 12 are rejected under 35 U.S.C. 102(a) as being anticipated by the article entitled "Synthesis, Characterization, and Sorption Properties of a Porous Coordination Polymer: $Co_3(citrate)_2(4,4'-bipyridine)_4(H_2O)_2 \cdot 4H_2O$ " authored by Liao et al., and published in *Inorganic Chemistry Communications* (2002), 5(10), 761-764. See the abstract, short description, and Figure 3.

Allowable Subject Matter

Claims 3 and 13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.


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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marc S. Zimmer whose telephone number is 571-272-1096. The examiner can normally be reached on Monday-Friday 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on 571-272-1302. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

December 7, 2006



MARC S. ZIMMER
PRIMARY EXAMINER